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Exalytics - One Size Fits All?

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Exalytics - One Size Fits All?

- This Presentation:
  - What IS Exalytics?
    - Lifting the fog of FUD and marketing
  - Just an Appliance?
    - Different ways that Exalytics can fit into a BI architecture
  - Which way is best?

- Not This Presentation
  - This is not … an Exalytics sales pitch
  - This is not … a £ for £ evaluation of deployment options
  - This is not … is Exalytics "better" than SAP HANA / QlikView / ZX81
  - This is not … the official Oracle line
  - This is not … necessarily supported, endorsed, approved or tolerated by Oracle

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Vanilla Exalytics

As God^H^H^H Larry intended it

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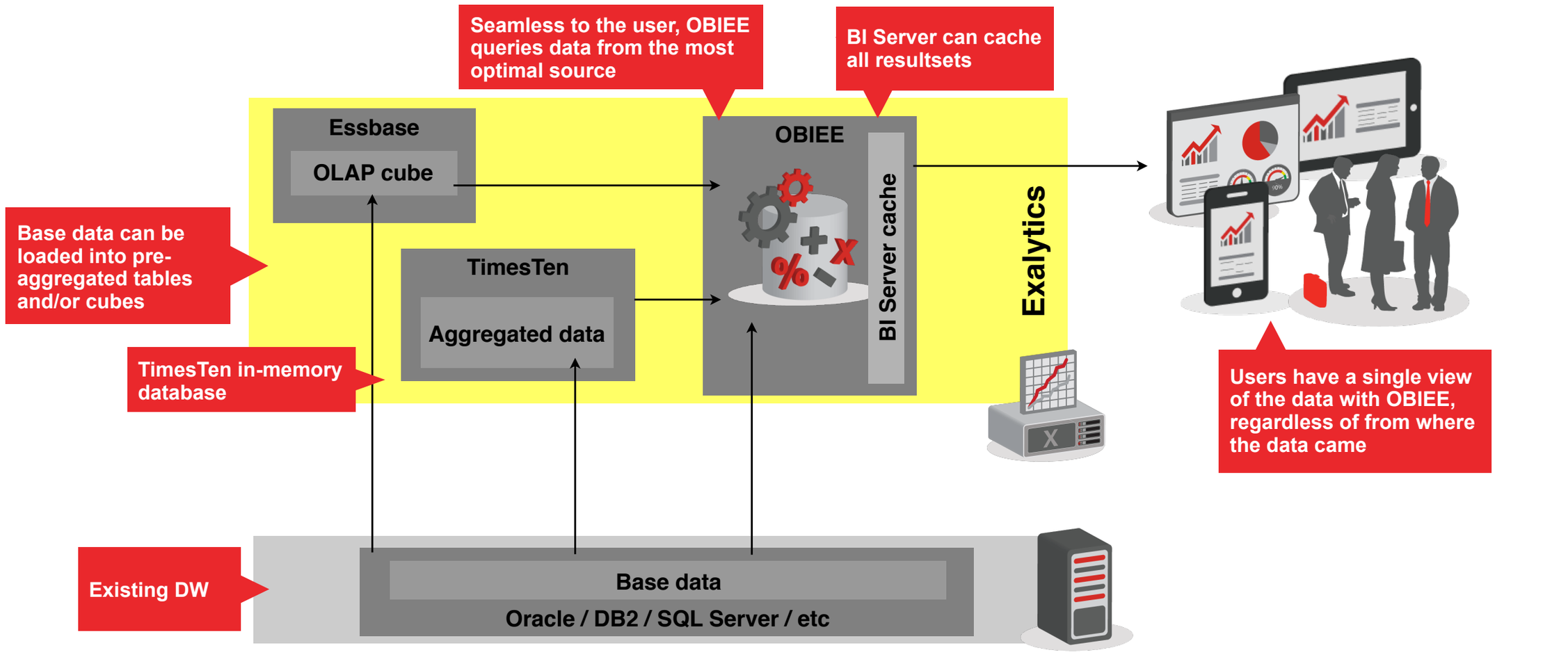
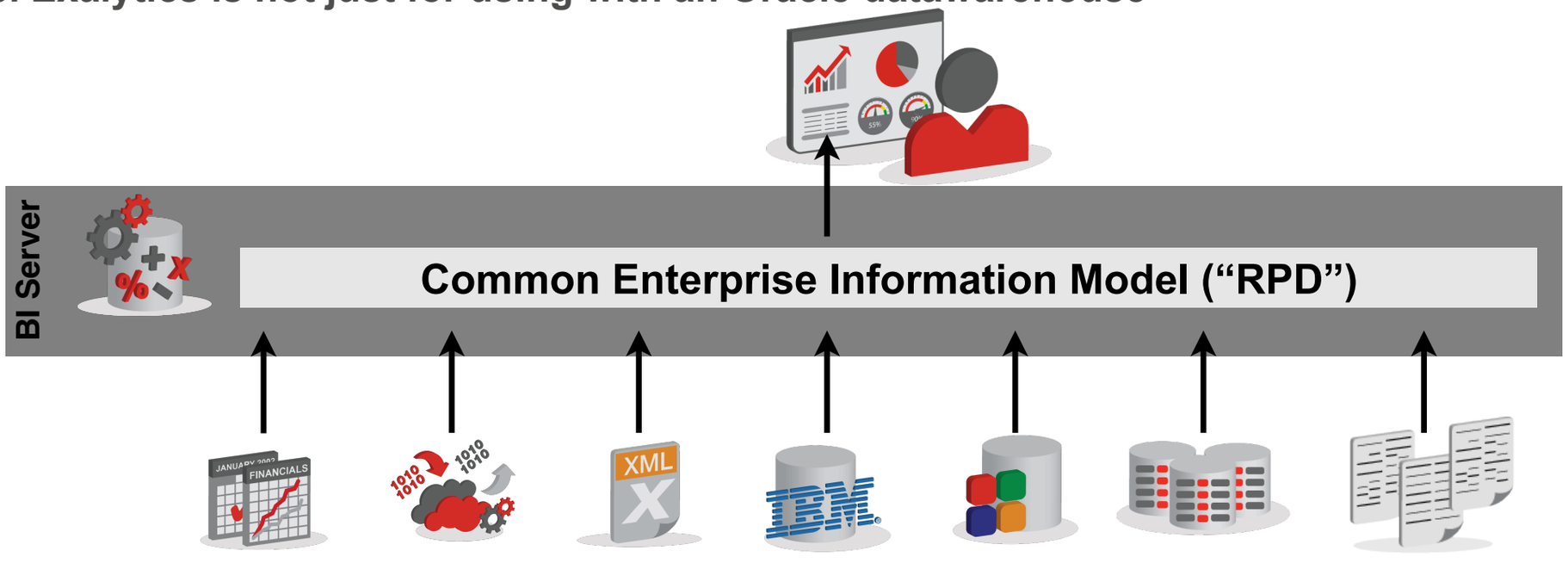
Exalytics basic architecture


Seamless to the user, OBIEE queries data from the most optimal source
BI Server can cache all resultsets
Essbase
OLAP cube
OBIEE
BI Server cache
Exalytics
Base data can be loaded into pre-aggregated tables and/or cubes
TimesTen
Aggregated data
TimesTen in-memory database
Users have a single view of the data with OBIEE, regardless of from where the data came
Existing DW
Base data
Oracle / DB2 / SQL Server / etc

The OBIEE “Common Enterprise Information Model”

- OBIEE abstracts the interface between physical data and the business view of it
- Many different data sources are supported, and OBIEE can join data across them
- Any datasource that can be used with OBIEE can therefore be used as a source for Exalytics
  - **i.e. Exalytics is not just for using with an Oracle datawarehouse**



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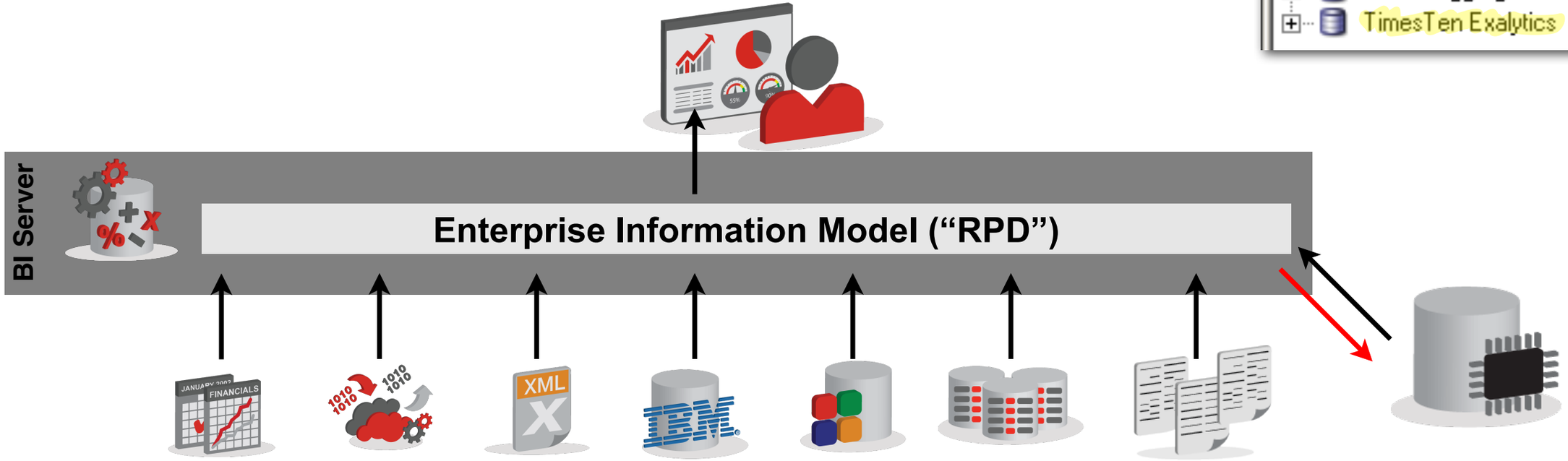
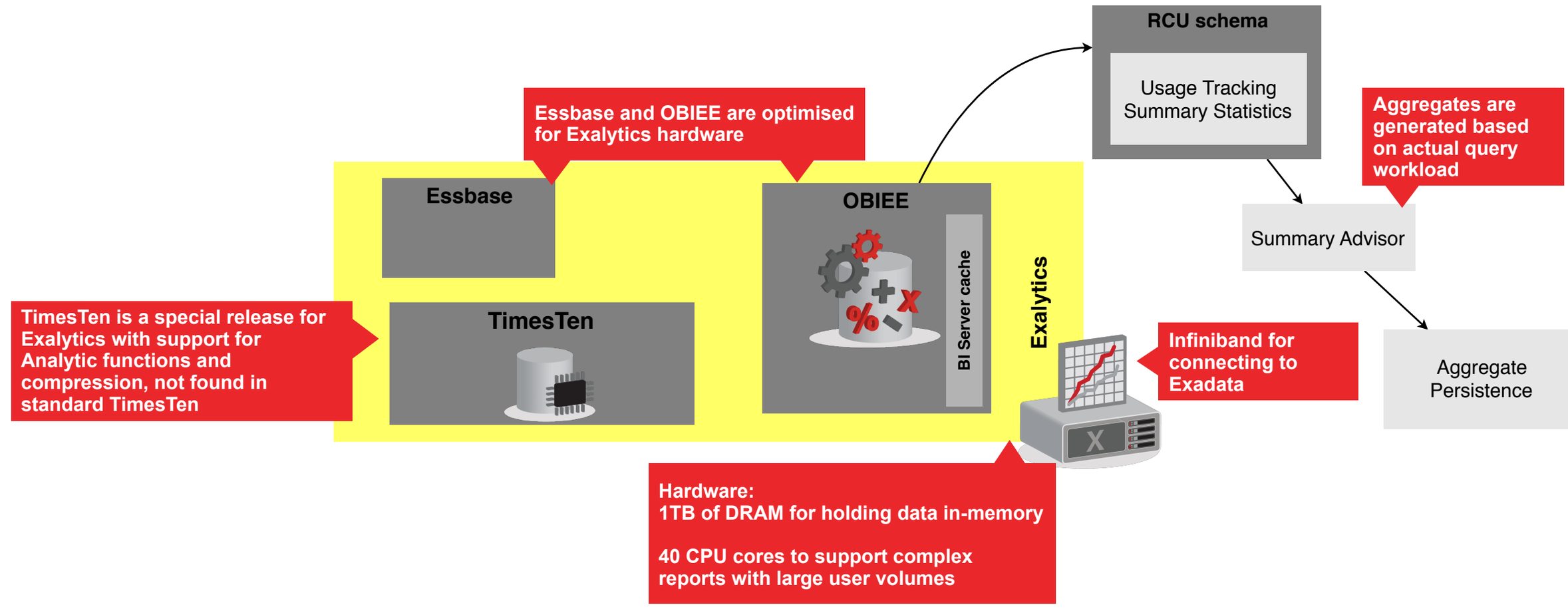
Using TimesTen with OBIEE

- In the context of OBIEE, TimesTen is “just” another data source for user queries
- OBIEE also uses the RPD metadata to load TimesTen with aggregates

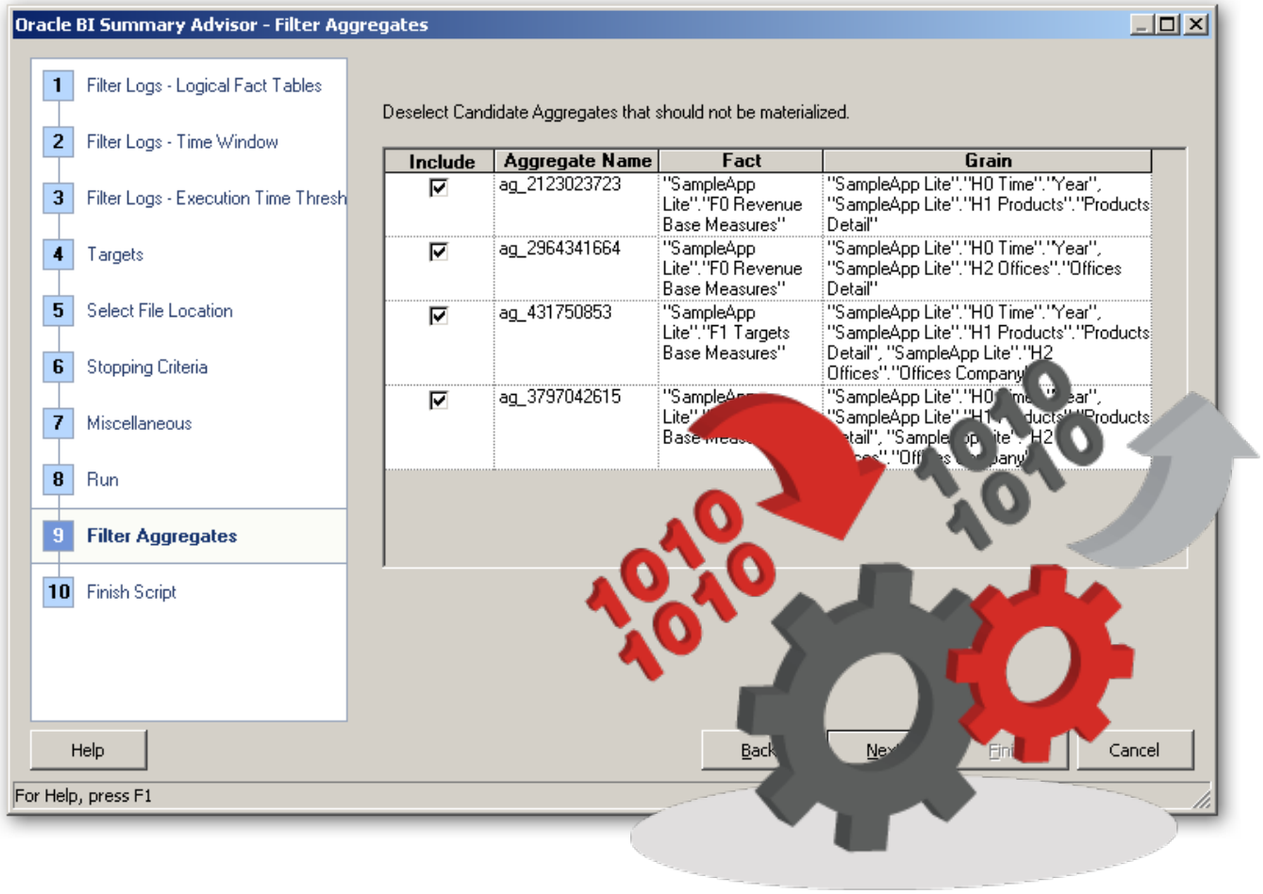


How is Exalytics different?


RCU schema
Usage Tracking
Summary Statistics
Aggregates are generated based on actual query workload
Summary Advisor
Aggregate Persistence
Essbase and OBIEE are optimised for Exalytics hardware
Essbase
OBIEE
BI Server cache
Exalytics
TimesTen
TimesTen is a special release for Exalytics with support for Analytic functions and compression, not found in standard TimesTen
Infiniband for connecting to Exadata
Hardware:
1TB of DRAM for holding data in-memory
40 CPU cores to support complex reports with large user volumes

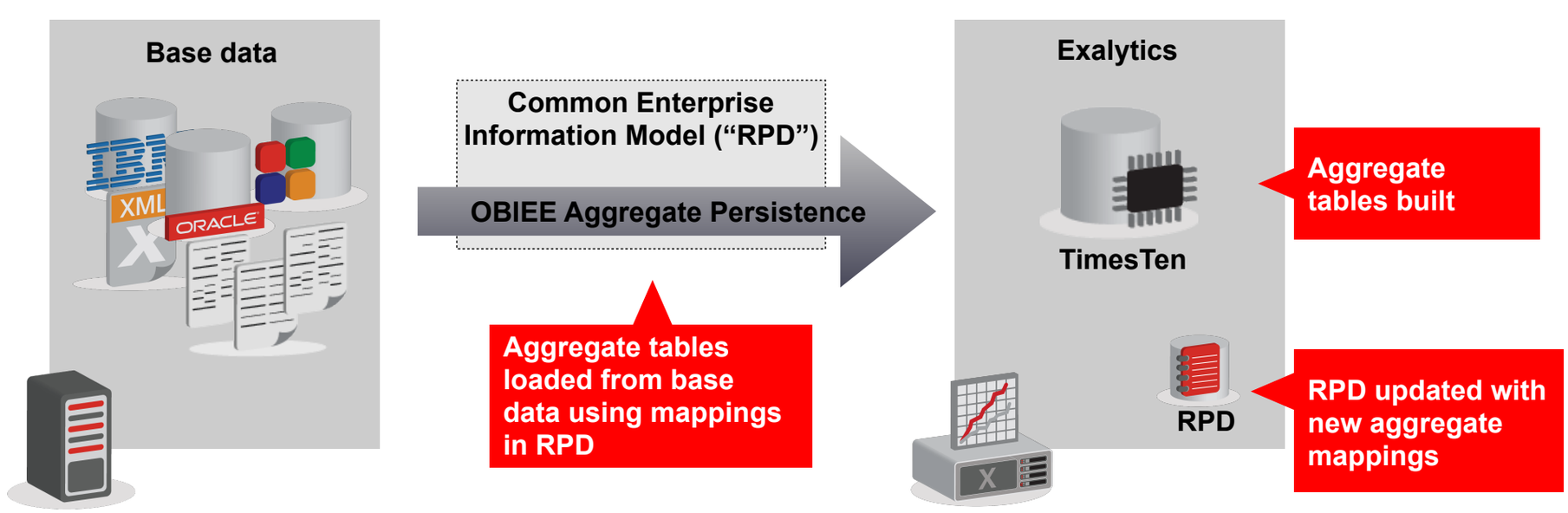
The Summary Advisor tool

- This is the “Adaptive” and “Self-tuning” element of Exalytics that the marketing material refers to
- Part of OBIEE, but Exalytics-only
- Analyses query workload to suggest most useful aggregates for TimesTen
- Manual, wizard-based interface generates a script



What the Summary Advisor script does

- Uses OBIEE's Aggregate Persistence functionality
- Creates and populates the aggregate data on TimesTen
- Adds aggregate information into the RPD



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Different ways to configure & deploy Exalytics

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Alternative Exalytics configurations

- For a fully optimised Exalytics deployment, alternative configurations may be useful
  - How data is loaded
  - *What* data is loaded

How data is loaded into Exalytics

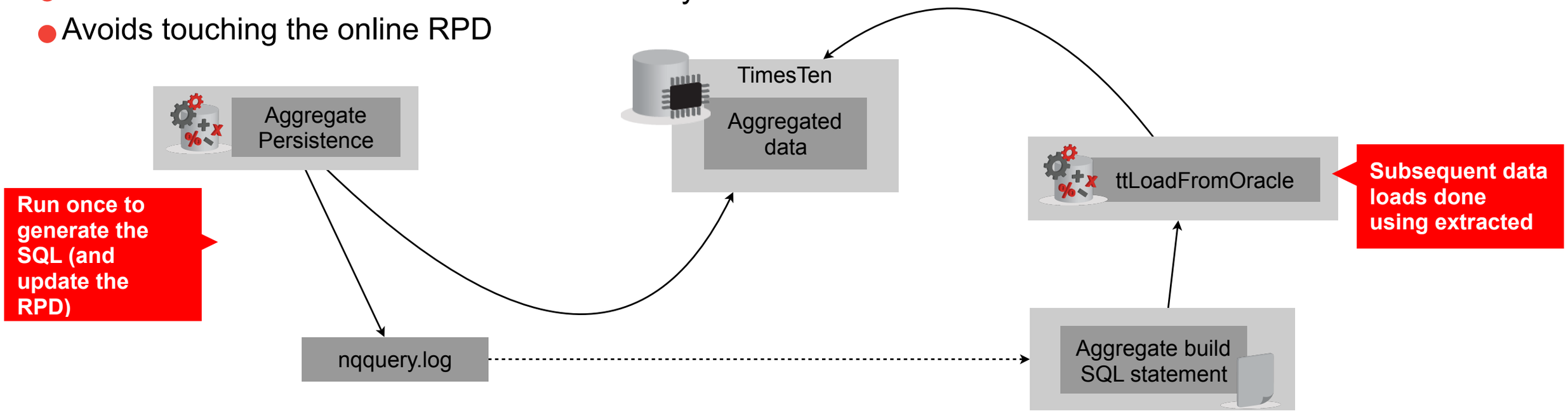
- Think of Exalytics in context of a datawarehouse ETL batch
  - Batch load time considerations
  - Maintainability considerations
- Several reasons to consider alternatives to Summary Advisor
  - No incremental refreshes
  - It is not bullet-proof...

```
"ag_3398609654"
 for "Store Sales"."Fact - Sales"("List Price","Paid (net)","Paid (net, inc tax)","Profit (net)
 at levels ("Store Sales"."Customer Location (Level based)"."City", "Store Sales"."Date (Level-
 using connection pool "TimesTen"."TT Connection Pool"
 in "TimesTen".."EXALYTICS"
[10058][State: S1000] [NQODBC] [SQL_STATE: S1000] [nQSError: 10058] A general error has occurr
[nQSError: 43113] Message returned from OBIS.
[nQSError: 43119] Query Failed:
[nQSError: 84008]
Statement preparation failed


Processed: 2 queries
Encountered 1  errors
```

Custom refresh - Oracle to TimesTen

- Extract the generated aggregation SQL
- Use a TimesTen routine to run the SQL directly
- Avoids touching the online RPD



NB: Not currently supported on Exalytics v1.0.0.1

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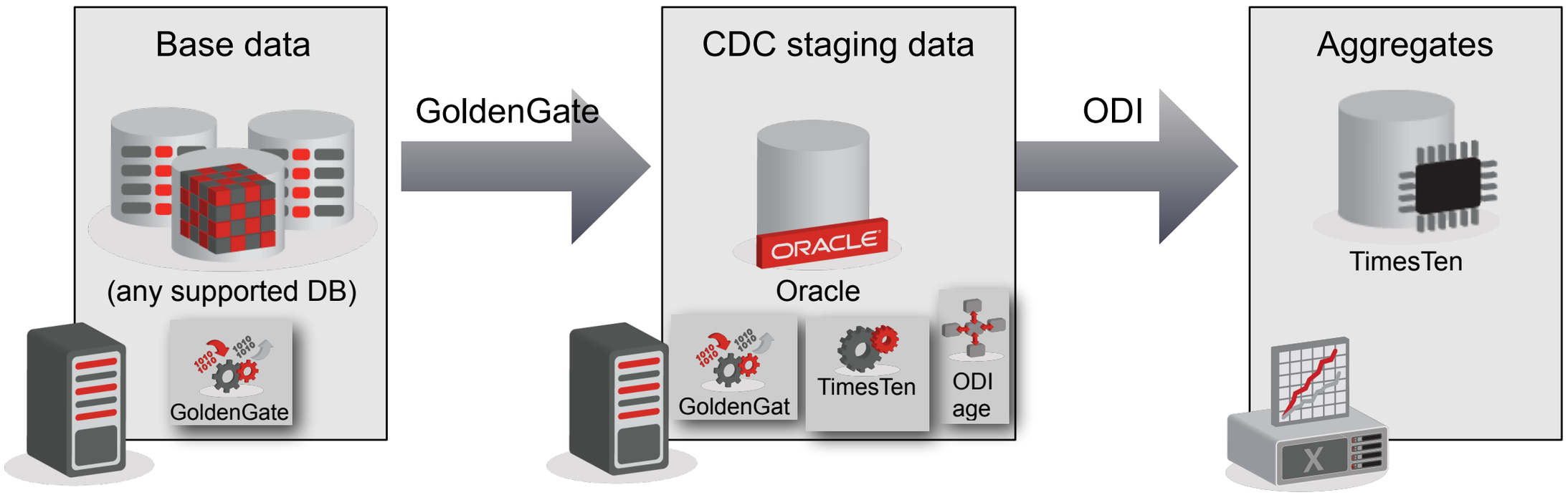
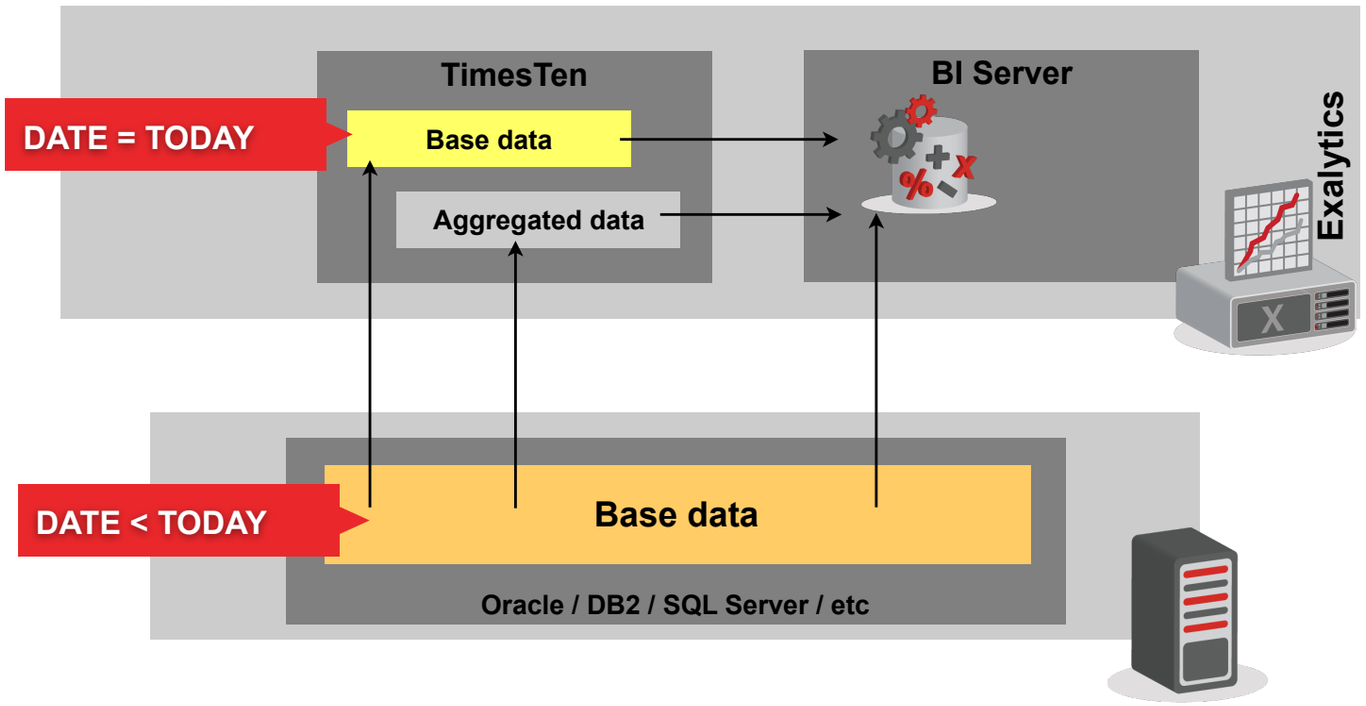
Incremental refresh of aggregates using GoldenGate and ODI

- Minimal changes required to source system
- Bespoke ODI code to apply the changed data to aggregate tables



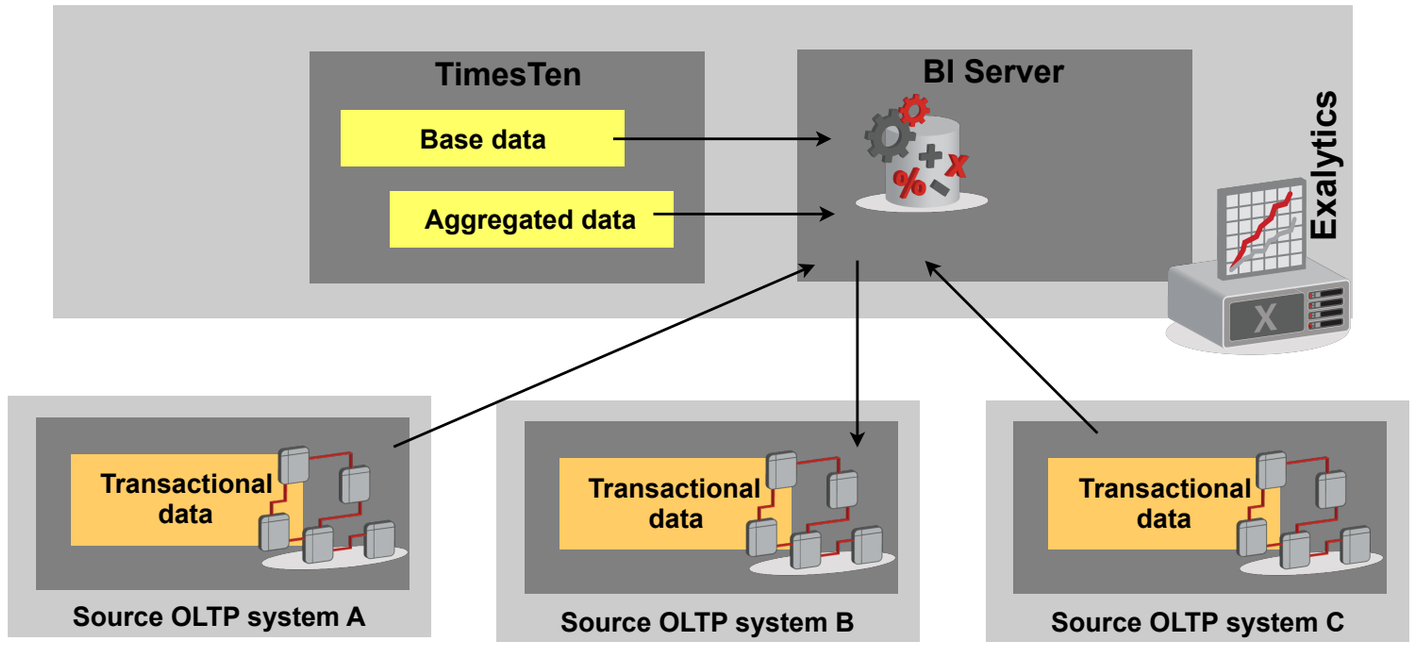
What data can be loaded into Exalytics?

- Base, unaggregated data
- Put “hot” transactional data in-memory
  - NB no out-of-the-box tool to load it



What data can be loaded into Exalytics?

- BI Server supports modelling against a vast array of sources
- Build aggregates directly from source in TimesTen for performance
- Uses native Summary Advisor / Aggregate Persistence



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Exalytics - One Size Fits All?

Summary

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Exalytics as an Exa-machine

One of the reasons why is Exalytics so frequently misunderstood

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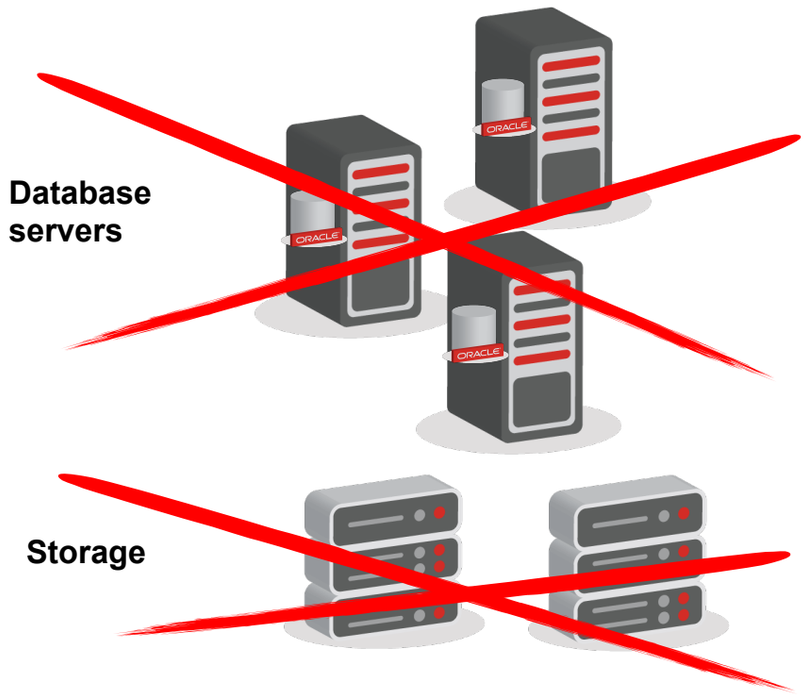
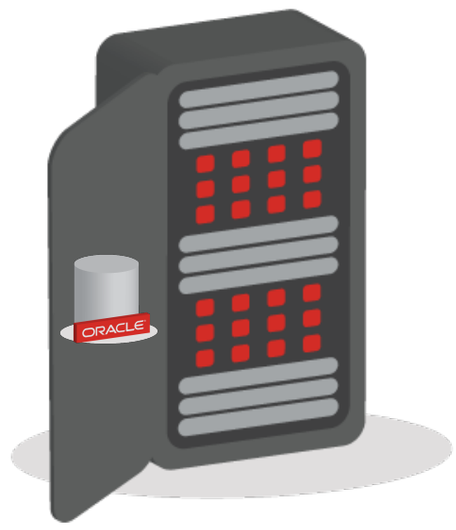
Exalytics as an Exa-machine

- **Exadata** - database appliance.
- All your storage + db servers in one place, faster + cheaper

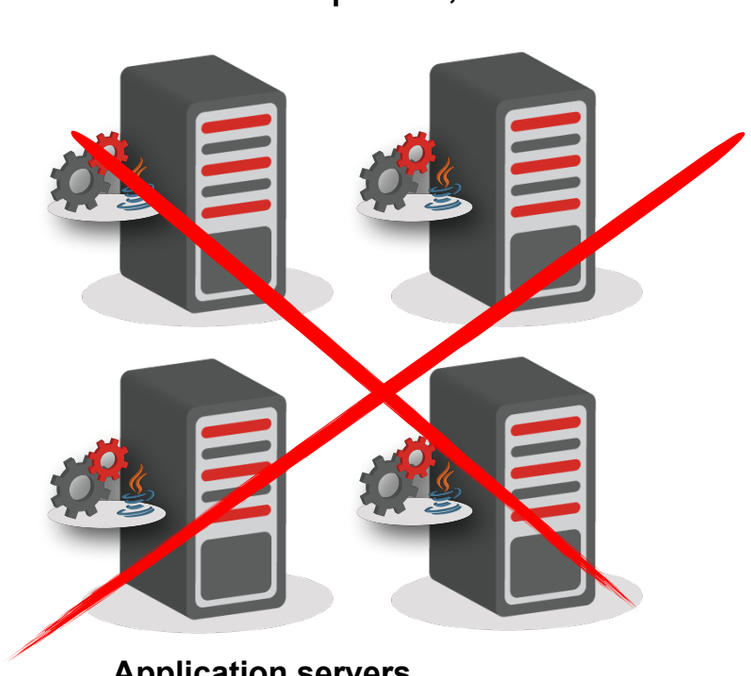




Exadata

Exalytics as an Exa-machine

- **Exalogic** - application server appliance.
- All your app servers in one place, faster and cheaper

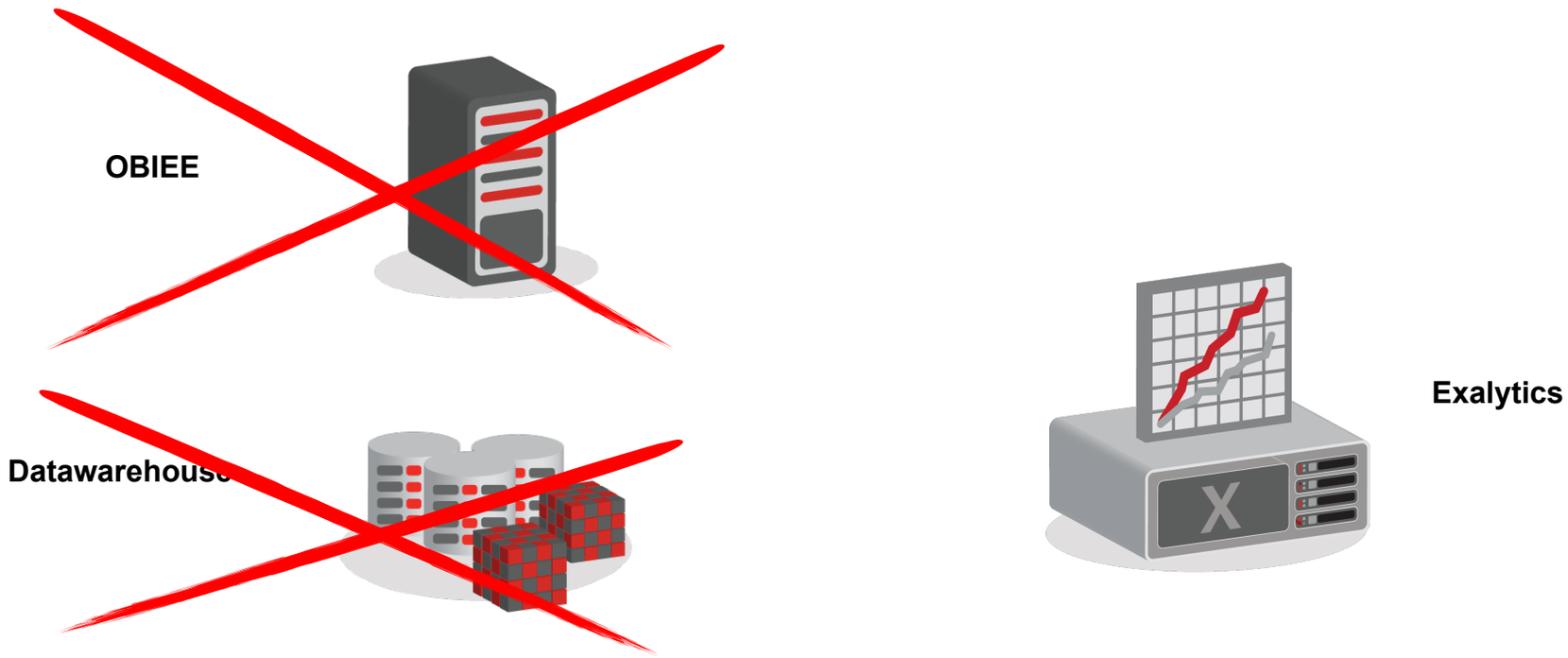


Application servers

Exalogic

Exalytics as an Exa-machine

- **Exalytics** - “in-memory BI appliance”. Faster + Cheaper.



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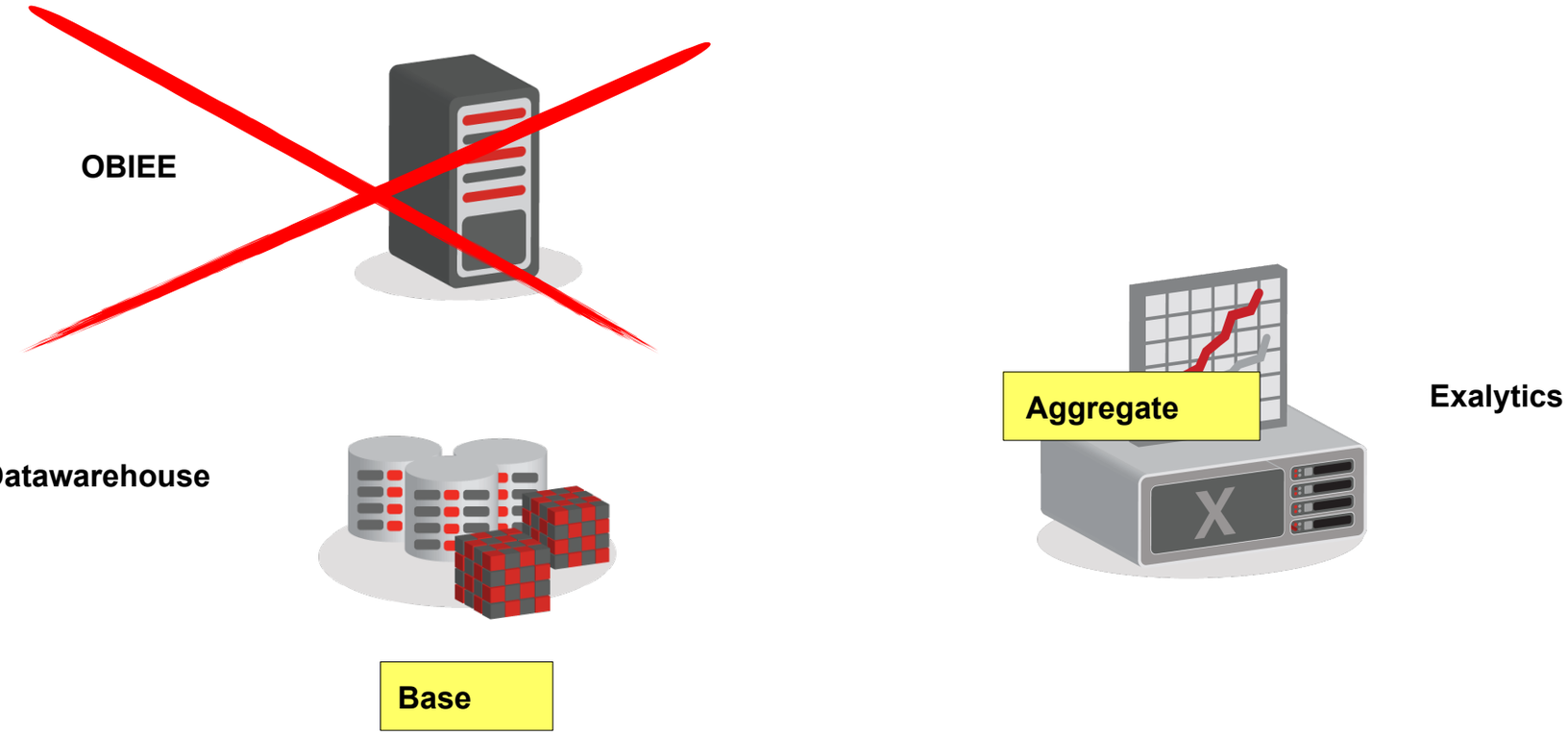

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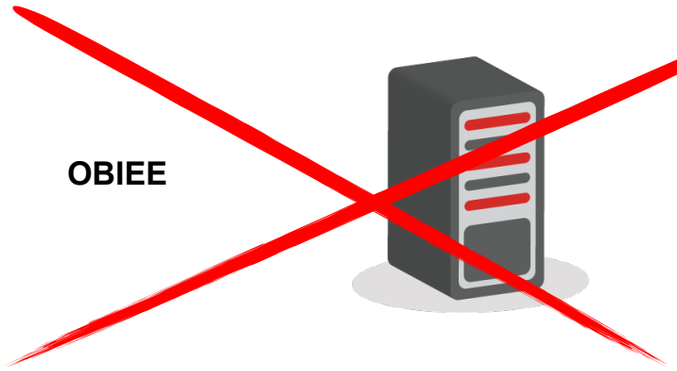

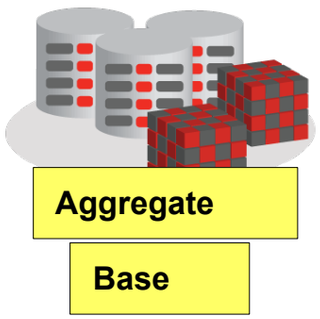

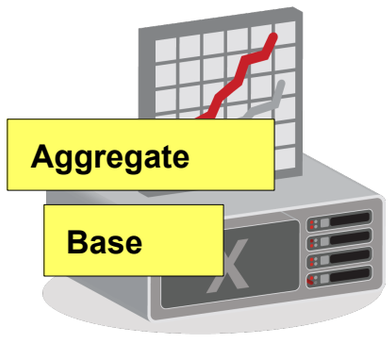

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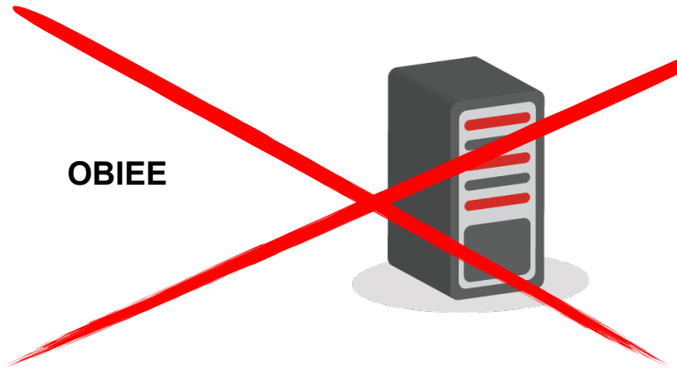

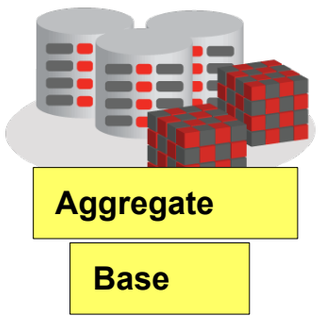

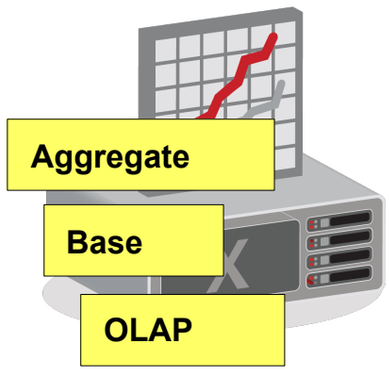

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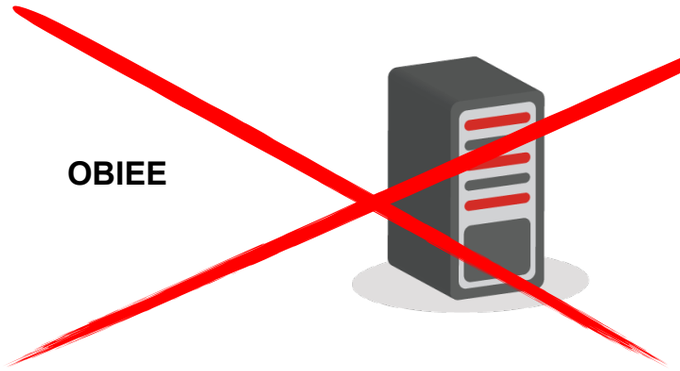

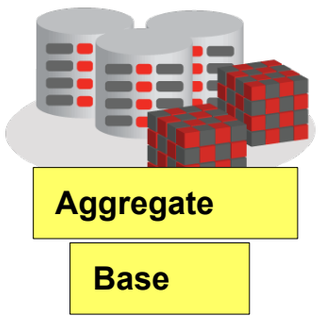

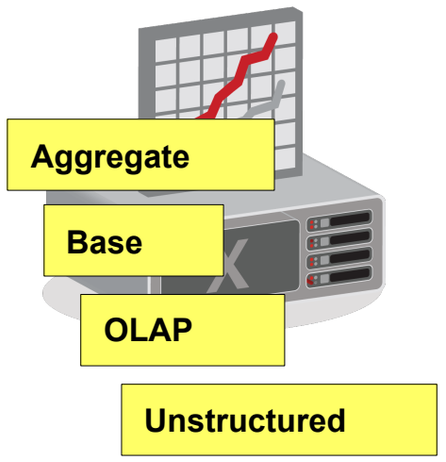

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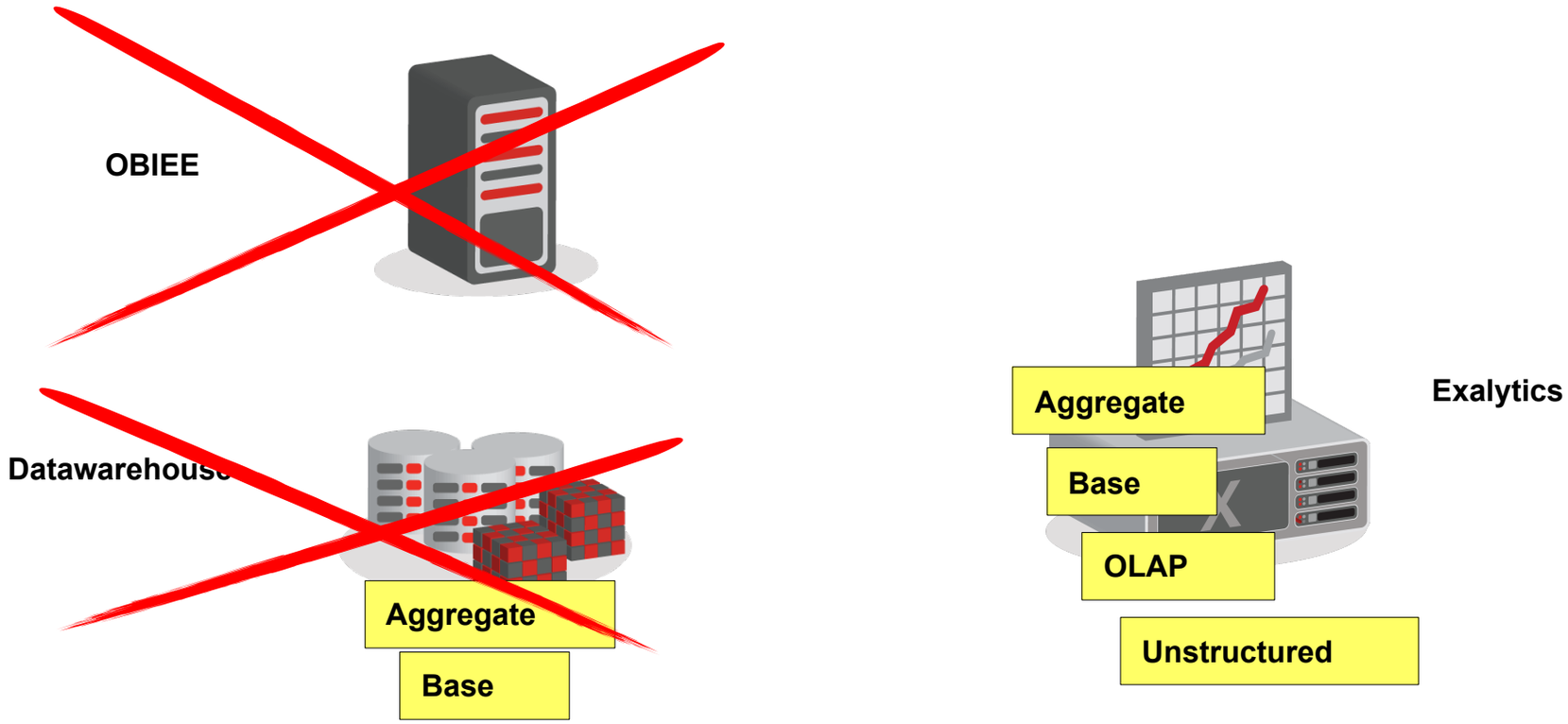

Exalytics - One Size Fits All?

- Exalytics as an appliance might be just the first step

- How you best use Exalytics depends entirely upon **YOUR** requirements
  - “Speed of thought” analytics
  - Support large user base
  - Consolidate/host multiple disparate deployments
  - Greenfield (adopting strategic Oracle direction)
  - Rapid sandboxing from OLTP

- Exalytics should normally be considered in the context of an overall BI architecture & strategy

- **Maximise the potential of your Exalytics plans by speaking to RittmanMead, the Exalytics experts!**

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